

Use of Library Resources and Services by Karanatak University Research Scholars: A Case Study

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ABSTRACT

Major aim of any university library is to support teaching, learning and research activities of its parent institutions, university library must therefore make sure that their resources are fine use of by its users. The study has been conducted to know the available information sources in the Karnataka university library and its usage pattern among the research scholars in different faculties in several Departments of the University. The study shows that how the usage of the information resources changing from print to e-resources and more users are eager to use electronic resources. For this study hypothesis was set and various statistical methods like chi-square test, etc., were used.

Keywords: Library resources, library services, use of resources, user study, information retrieval

1. INTRODUCTION

The major aim of any university library is to support teaching, learning and research activities. University library must therefore make sure that their resources are well utilised as this is essential for Educational development. Therefore, information is acquired, processed, and disseminated through the university library in educational setting. Many studies have been carried out on availability of library resource and utilisation of existing resource. Among those studies many of them find out scarcity of resources for usage¹⁻² and obsolescence of existing resources. For the library personnel, it is necessary to understand, how to use resources, changing needs of users and their levels of satisfaction. The university libraries therefore, provide relevant resources and services to its users like students, researchers and faculties. The libraries have different functions like, borrowing books, current services and retrospective search, current contents, research journals, research reports, bibliographical tools, reference material, information consolidation and repackaging services and products for its clientele³. Even university libraries are implicit e-resources replaces the physical material⁴. The current study also carried out to find out the usage pattern of existing library resources and services. The study looks at the use of library resources by research scholars in various faculties at Karnatak University.

2. LITERATURE REVIEW

Numbers of studies have been conducted on the use of information resources by research scholars. A study by Awana⁵ reveals that the academic libraries more often do not have current and relevant information, due to this academic libraries fail to attract more users towards libraries. In an another study by Siddique⁶ on the uses of library collection in Jawaharlal Nehru University library, found that 69 % visit the library daily and 31 % of them found the library collection adequate to meet their information needs.

Kawatra⁷ in his study found the attitudes of research scholars towards use of resources and services in three universities of Rajasthan, it was observed that scholars at all the three universities are not adequately involved in using the sources. Another study by Jamil, T. & Jamil⁸ found out that, besides using the available library material users find lack of library services and skilled staff for retrieval of the required information. However, the faculties are well aware about the use of library resources and services also well versed in library classification and cataloging for locating the library resources as studied by Lahor & Kumbar⁹.

Ologbonsaiye¹⁰ found that the index for scaling patrons satisfaction include the quality of a library's collections, services and availability of materials for use in the types and accessibility to users.

Lawal¹¹ reveals that, the proficient organisation of non-print resources ensures maximum utilisation and facilitates effective information retrieval.

3. OBJECTIVES

The objectives of the study are to:

- Examine how often and what purpose scholars use the library;
- Find the information resources and search strategies to meet the information need;
- Identify services used and problems encountered by scholars in the library; and
- Find out what research scholars are satisfied with information resources.

3.1 Hypothesis and Limitations

- (1) There is no significant difference in the use of library resources and services among research scholars in different disciplines
- (2) There is no significant difference in use of library resources and services between the male and female scholars.

The study is limited to utilisation of library resources and service by full-time research scholars of Karnatak University, who are pursuing their doctoral degree in arts, science, commerce, and management.

4. METHODOLOGY

A sample survey was conducted of the total population of research scholars from various Departments of Karnatak University Campus, Karnatak Science and Arts College, Dharwad. The collected data was analysed by using SPSS software.

Sample size is influenced by number of factors, including the purpose of the study, population size,

Table 1. Sample size determination with different precision levels

S. No.	Precision (d)	Sample size (n)
1.	0.01	586
2.	0.02	494
3.	0.03	392
4.	0.04	306
5.	0.05	236
6.	0.06	186
7.	0.07	147

for computing the sample size for proportion. The total population size of research scholars was N=624, then sample size with different precision levels were determined. In total population of considered 151 samples, 109 are males and 42 are females. Using the random numbers from scientific calculator, selection has made sampling units from the population of research scholars in the university. The stratified random sampling mechanism has selected for the sample and used (Table 1).

5. ANALYSIS AND INTERPRETATION

The chi-square test has been used for difference of proportions. The selection of Chi-square test is justified in section 5.8 (Chi-square test for independence).

5.1 Frequency of Library Visit

Table 2 reveals that daily visit to the library is popular among arts and commerce faculties. However, science research scholars daily visiting the library is less observed, as the science faculties have lab oriented system and they use the technology system often hence, visiting the library was not common.

Whereas arts and commerce scholars prefer manual work and half of them prefer to visit library daily as they have no lab visits, on the other

Table 2. Frequency of library visit

S.No.	Frequency of visit	Science		Commerce and Management		Arts	
		Male	Female	Male	Female	Male	Female
1.	Occasionally	13.30 %	28.60 %	15.40 %	0.00 %	4.60 %	30.00 %
2.	Monthly	43.30 %	35.70 %	30.80 %	50.00 %	33.80 %	25.00 %
3.	Weekly	26.70 %	21.40 %	7.70 %	0.00 %	9.20 %	0.00 %
4.	Daily	16.70 %	14.30 %	46.20 %	50.00 %	52.30 %	45.00 %

risk of selecting a bad sample, time period and the allowable sampling errors. In addition to purpose of the study and population size, three criteria specified to determine the appropriate sample size, the level precision, the level of confidence or risk, and the degree of variability in the attributes being measured. Cochran¹² gives the procedure (formula)

hand, science scholars prefer to visit library once in a month for their research needs due to time constraints.

5.2 Purpose of Library Visit

Table 3 indicates that, every research scholars visit library to consult the material for research,

seminar preparation, current updation, browse internet and, borrow books. Male (92.30 %) and female (100 %) in commerce and management scholars are more frequently visiting the library. This is because of the availability of new research materials were available in the library.

5.3 Information Sources Used in Library

Mohamed¹³, Nzivo¹⁴ study shows that internet facility is used more by researchers. However, it is not popular among scholars in present study. It is observed from the Table 4 that, maximum research scholars use the reference materials in their research endeavour; next to this they use thesis/dissertation. Arts and science scholars use the textbooks/monographs more as compared to reference materials (it is reached 100 % in female respondents in commerce and management) and thesis but in commerce and management the scholars preferred to refer periodicals as these consist of recent research. Among sources conference and

seminar papers are very less frequently used by scholars.

5.4 Services Used in Library

A study conducted by Hussain and Krishna¹⁵ shows that services like reference service, current awareness services, online search services, bibliographic services are used at a large extent by users in a library. According to the present study Table 5 shows that most research scholars use reference services and bibliography services more frequently. The entire scholars used reference service in an average of 71.06 %, with highest percentage observed in female scholars in commerce and management, next in arts on the contrary, consultancy service is used on an average of 13.93 %.

5.5 Representing Search Strategies

From Table 6, it is observed that research scholars use the strategy of browsing through shelves (78.35 %) getting information from friends

Table 3. Purpose of library visit

S. No.	Purpose of library visit	Science		Commerce and Management		Arts	
		Male	Female	Male	Female	Male	Female
1.	Borrow and return book	39.30 %	61.50 %	53.80 %	37.50 %	33.80 %	30.00 %
2.	Browse internet	10.70 %	15.40 %	38.50 %	25.00 %	16.90 %	5.00 %
3.	Consult material for research	89.30 %	76.90 %	92.30 %	100.00 %	84.60 %	90.00 %
4.	Read newspapers	10.70 %	7.70 %	30.80 %	25.00 %	27.70 %	20.00 %
5.	Prepare seminar preparation	14.30 %	7.70 %	23.10 %	25.00 %	15.40 %	25.00 %

Table 4. Information sources used in library

S. No.	Materials used in library	Frequency					
		Science		Commerce & Management		Arts	
		Male	Female	Male	Female	Male	Female
1.	Internet facility	6 (21.40)	4 (30.8.)	10 (76.90)	4 (50.00)	18 (27.70)	3 (15.00)
2.	Textbooks/monographs	16 (57.10)	10 (76.90)	5 (38.50)	4 (50.00)	42 (64.60)	11 (55.00)
3.	E-journals/e-books	9 (32.10)	9 (69.20)	5 (38.50)	4 (50.00)	21 (32.30)	7 (35.00)
4.	Reference materials	21 (75.00)	12 (92.30)	11 (84.60)	8 (100)	48 (73.80)	14 (70.00)
5.	Thesis/dissertation	18 (64.30)	10 (76.90)	8 (61.50)	6 (75.00)	41 (63.10)	8 (40.00)
6.	Govt. publications	4 (40.30)	4 (30.80)	5 (38.50)	2 (25.00)	21 (32.30)	6 (30.00)
7.	Conference/seminar papers	8 (28.60)	3 (23.10)	4 (30.80)	1 (12.50)	20 (30.80)	4 (20.00)
8.	Periodicals	8 (28.60)	3 (23.10)	10 (76.90)	5 (62.50)	23 (35.40)	8 (40.00)
	Total	28	13	13	8	65	20

Table 5. Use of library services

S. No.	Use of library services	Science		Commerce and Management		Arts	
		Male	Female	Male	Female	Male	Female
1.	Consultancy service	10.70 %	15.40 %	7.70 %	25.00 %	14.30 %	10.50 %
2.	Reference service	67.90 %	69.20 %	69.20 %	75.00 %	71.40 %	73.70 %
3.	Book loan service	21.40 %	23.10 %	7.70 %	50.00 %	23.80 %	10.50 %
4.	Bibliography	57.10 %	46.20 %	61.50 %	62.50 %	54.00 %	42.10 %

Table 6. Search strategies

S. No.	Use of search strategies	Frequency					
		Science		Commerce & Management		Arts	
		Male	Female	Male	Female	Male	Female
1.	Browse through shelves	8 (29.60)	7 (53.80)	9 (69.20)	7 (87.50)	18 (27.70)	11 (55.00)
2.	Consult bibliography	8 (29.60)	7 (53.80)	9 (69.20)	7 (87.50)	18 (27.70)	11 (55.00)
3.	Utilisation of index & abstract	8 (29.60)	4 (30.80)	3 (23.10)	3 (37.50)	34 (52.30)	6 (30.00)
4.	Information from friends	10 (37.00)	5 (38.50)	2 (15.40)	2 (25.00)	30 (46.20)	10 (50.00)
5.	Library staff	5 (18.50)	4 (30.80)	1 (07.70)	2 (25.00)	17 (26.20)	3 (15.00)
6.	Manual card data logs	10 (37.00)	6 (46.20)	6 (46.20)	0 (0.00)	25 (38.50)	11 (55.00)
7.	OPAC	5 (18.50)	6 (46.20)	5 (38.50)	1 (12.50)	23 (35.40)	7 (35.00)
8.	Websites	1 (03.70)	1 (07.70)	3 (23.10)	3 (37.50)	9 (13.80)	1 (05.00)
	Total	15 (55.60)	7 (53.80)	8 (61.50)	3 (37.50)	19 (29.20)	1 (05.00)

(48.10 %) and also utilised the indexes and abstracts (41.15 %) which most popular search strategies by arts research scholars, however, usage of website less than the other two faculties since they don't use internet more. The manual card data logs (41.6 %); browse through shelves (41.7 %) and consulting bibliography (41.7 %), information from friends (37.75 %) are most commonly used search strategies among science scholars.

5.6 Problems Encountered in Using Library Resources

Irehovbude¹⁶ and Dina¹⁷ observed that the unavailability condition and inadequate library resources also affect the use of library resources. Korobili, Tilikidou and Delistavrou¹⁸ also observed many problems while seeking information in library. It is noted from the Table 7 that research scholars have to face accountable problems which includes lack of time, insufficient internet access points, book loan period as oppose to unaccountable problems like lack of space, power outages, lack of library orientation and so on.

5.7 Satisfaction of Library Services

Ranganadham & Babu³ and Mukherjee & Prashant¹⁹ discussed in their paper the level of satisfaction of the users which is seen in usage of library resources and services. Table 8 reveals that the maximum of all research scholars are averagely satisfied followed by fully satisfied and not at all satisfied users.

5.8 Chi-square Test for Independence

When a sample is categorised on two attributes, the Chi-square test for independence is used. It is assumed that the sample is randomly selected from the population. One the attributes is comprised of 'r' categories that are represented by the 'r' rows of the contingency table, while the second attribute is comprised of 'c' categories that are represented by the 'c' columns of the contingency table. The Chi-square tests or independence evaluates the general hypothesis at the two attributes are independent of one another. Another way of stating the two attributes are independent of one another is to

Table 7. Problems encountered in using library resources

S. No.	Problems encountered in library	Frequency					
		Science		Commerce & Management		Arts	
		Male	Female	Male	Female	Male	Female
1.	Insufficient internet access points	10 (40.00)	1 (08.30)	3 (33.30)	1 (14.30)	16 (29.60)	1 (08.30)
2.	Opening hours	5 (20.00)	2 (16.70)	0 (00.00)	2 (28.60)	12 (22.20)	1 (08.30)
3.	Space not enough	0 (00.00)	1 (08.30)	5 (55.60)	2 (28.60)	6 (11.10)	0 (00.00)
4.	Lack of time	4 (16.00)	5 (41.70)	3 (33.30)	4 (57.10)	11 (20.40)	5 (41.70)
5.	Short duration of book loan	2 (08.00)	4 (33.30)	2 (22.20)	2 (28.60)	16 (29.60)	4 (33.30)
6.	Power outage	0 (00.00)	0 (00.00)	0 (00.00)	0 (00.00)	1 (01.80)	0 (00.00)
7.	Lack of library orientation	4 (16.00)	1 (08.30)	0 (00.00)	0 (00.00)	14 (25.90)	2 (16.70)
8.	Manners less	0 (00.00)	0 (00.00)	1 (11.10)	0 (00.00)	4 (07.40)	1 (08.30)
9.	Obsolete book	10 (40.00)	0 (00.00)	1 (11.10)	0 (00.00)	11 (20.40)	4 (33.30)
	Total	25	12	9	7	54	12

Table 8. Satisfaction of library services.

S. No.	Satisfaction of library services	Science		Commerce and Management		Arts	
		Male	Female	Male	Female	Male	Female
1.	Averagely satisfied	63.30 %	57.10 %	61.50 %	87.50 %	62.10 %	50.00 %
2.	Fully satisfied	36.70 %	35.70 %	38.50 %	0.00 %	33.30 %	50.00 %
3.	Not satisfied	0.00 %	7.10 %	0.00 %	12.50 %	4.50 %	0.00 %

say that is a zero correlation between them. A zero correlation indicates that there is no way to predict at about chance in which category an observation will fall on one of the attributes. H₀: The two attributes are independent
H₁: The two attributes are not independent

The test statistic for the Chi-square test for rxc contingency table is computed by the following equation

$$\chi^2 = \sum_{i=0}^r \sum_{j=0}^c \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

$$\chi^2 (\text{Chi-square}) = (\text{sum of } i^{\text{th}} \text{ row}) * (\text{sum of } j^{\text{th}} \text{ column}) / \text{sample size}(n)$$

where, O_{ij} is the observed frequency; E_{ij} is the expected frequency of the $(i,j)^{\text{th}}$

One has to compare the value with calculated value and if the value is greater than calculated value, it can be concluded that the data does not provide any evidence against independence otherwise conclude as dependent (Table 9). One can observe p-value, the probability that the random variable will exceed observed value, when H_0 is true.

Table 9. Guidelines for judging the significance of p-value

S. No.	P-value	Interpretation
1.	$p > .05$	Result is not significant
2.	$.01 < p < .05$	Result is significant
3.	$.001 < p < .01$	Result is highly significant
4.	$p < .001$	Result is very highly significant

Chi-square test was conducted between daily visiting libraries against different faculties. Null hypothesis says that H_0 : Daily visiting library is independent in different faculties. From Table 10, the result is statistically significant there by indicating that faculty and daily visiting library are not independent.

Chi-square test was conducted between daily visiting libraries against gender. Null hypothesis, H_0 : is that Research scholar's daily visiting the library is independent of gender. From Table 11, it is observed that the null hypothesis is valid. The result is statistically not significant thereby indicating that gender and daily visiting library are independent.

Table 10. Faculty daily visiting library

S. No.	Faculty		Daily visiting library		Total
			Yes	No	
1.	Science	Count	7	37	44
		Expected count	17.5	26.5	44
2.	Commerce & Management	Count	10	11	21
		Expected count	8.3	12.7	21
3.	Arts	Count	43	43	86
		Expected count	34.2	51.8	86
Total		Count	60	91	151
		Expected count	60	91	151

Chi-Square Test

	Chi-square statistics	df	p value
Pearson Chi-Square	14.76	2	0.001

Table 11. Gender daily visiting library

S. No.	Gender		Daily visiting library		Total
			Yes	No	
1.	Male	Count	45	64	109
		Expected count	43.3	65.7	109
2.	Female	Count	15	27	42
		Expected count	16.7	25.3	42
Total		Count	60	91	151
		Expected count	60	91	151

Chi-Square Test

	Chi-square statistics	df	p value
Pearson Chi-Square	0.393	1	0.531

5.9 Test For Difference of Proportion

This is used to test whether there is any significant difference between the population proportions with respect to the characteristic under study.

Let ' p_1 ' be the proportion of individuals favouring characteristics under study in population-I, i.e., p_1 represents the proportion of arts, commerce and management research scholars. Let ' p_2 ' be the proportion of individuals favouring to characteristic

under study in population II, i.e., p_2 represents the proportion of science research scholars. Here to test the hypothesis: $H_0: p_1=p_2$ against $H_1: p_1 \neq (< \text{or} >) p_2$.

$$\chi^2 = \sum_{i=0}^r \sum_{j=0}^c \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

\hat{p} is the pooled estimate given by

$$\hat{p} = \left\{ \frac{(n_1 * \hat{p}_1 + n_2 * \hat{p}_2)}{n_1 + n_2} \right\}$$

\hat{p}_1 is the observed success proportion in the first

sample, \hat{p}_2 is the success in the second sample

It is calculated that the proportion of individuals in population-I favouring to characteristic under study is significantly different from the proportion of individuals in population-II.

6. OBSERVATIONS AND DISCUSSIONS

It is observed from the study, science research scholars visit the library on priority basis, preferably on weekends and/or monthly to find some tools and techniques for their research often, as they have lab oriented research. On the another hand scholars in arts and commerce and management prefer to visit library daily or weekly as they don't have practical oriented research.

From the study it was that noted, that almost all scholars visit the library to consult the material and borrowing books for their research. This helps in updating and referring new research materials. It was also observed that the commonly used materials in the library, here also observed that maximum research scholars use textbooks/monographs, reference materials and thesis/dissertation to a large extent than other information sources.

It is noted that bibliography and reference services are most used and popular services among research scholars as compared to other services like book loan service and consultancy services. It was found out that almost all research scholar use and adopt search strategies are browsing through shelves. While, arts research scholars use website and OPAC less as compared to other faculties, it shows that lack of computer literacy among arts research scholars can be the reason behind this.

Research scholars have problem of scarcity of time, short duration of book loan, insufficient internet access points. The study shows female scholars have problem of lack of time while male scholars face problem of insufficient internet access points. The study also reveals that, maximum of research scholars are less satisfied, followed by

fully satisfied and not satisfied in term of use of library resources and services.

7. CONCLUSIONS

From the current study it drawn that, the scholars should make habit of visiting library not only consulting the materials for research but also keeping in mind about the overall knowledge development. The information literacy and computer literacy are making capable the scholars in order to investigate the resources through OPAC, Databases, etc., The availability of information sources is significant in research productivity in academics. Researchers are using electronic aids to find out the digital information sources and printed information sources. However, it is observed less among the science and arts research scholars. So, it is suggested that libraries and librarians should initiate to procure and disseminate e-resources to its users.

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